

Appendix A: Environmental Assessment

A. Introduction and Background

The Office of Pipeline Safety (OPS) is conducting a Risk Management Demonstration Program with pipeline operators to determine how risk management might be used to complement and improve the existing Federal pipeline safety regulatory process. OPS selected Tennessee Gas Pipeline Company (TGP) as a candidate for participation in the Demonstration Program; subsequently, OPS and TGP held discussions as part of a consultation process. During the consultation, TGP identified four pipeline segments in its system where it proposed to perform a set of risk control activities as an alternative to certain regulatory requirements relating to class location changes. TGP submitted a request to OPS to waive these requirements for the four segments (the “waiver segments”). TGP’s waiver request states that TGP will carry out the proposed alternative risk control activities (the “Activities”) in lieu of compliance with these regulatory requirements. The Activities have been designed to achieve a margin of safety and environmental protection comparable to the margin provided by 49 CFR § 192.611. TGP has consulted with OPS to demonstrate the comparable results of the Activities and OPS is considering granting a waiver to allow TGP to implement the Activities in lieu of compliance with 49 CFR § 192.611.

prepared in accordance with section 102(2)(c) of the National Environmental Policy Act (42 U.S.C. Section 4332), the Council on Environmental Quality regulations (40 CFR Sections 1500-1508), and Department of Transportation (DOT) Order 5610.1c, Procedures for Considering Environmental Impacts. It was prepared to assist in the agency's planning and decision-making. This document describes OPS's proposed action of granting a waiver to allow implementation of the TGP Activities, the environment affected by this action, each of the alternative approaches considered, the consequences to the environment of each of the alternatives OPS considered, and a list of the agencies and organizations consulted. This Environmental Assessment provides sufficient evidence to determine that granting a waiver to allow implementation of TGP's Activities will have no significant impact on the environment.

B. Description of Proposed Action

Based on an analysis of risks along its pipeline system, TGP has identified four pipe segments (the "waiver segments") located together in Tennessee where it believes the implementation of alternative risk control activities (the "Activities") will result in a margin of safety and environmental protection comparable to compliance with 49 CFR § 192.611. The waiver segments are described in Section D of this environmental assessment.

proposed in lieu of compliance with pipeline safety requirements that address population density increases that have occurred in the vicinity of the pipeline.

B.1 Current Regulatory Requirements

This section describes the current regulatory requirements in 49 CFR § 192.611 governing actions that must be taken by a pipeline operator when population density increases along a pipeline.

OPS categorizes all locations along natural gas pipelines according to the population densities near the pipelines (see 49 CFR § 192.5). Locations with the lowest population density (10 or fewer buildings intended for human occupancy within an area that extends 220 yards on either side of the centerline of any continuous one mile length pipeline) are designated as Class 1. As the population along a pipeline increases, the class location increases. For example, Class 2 locations have more than 10 but fewer than 46 buildings intended for human occupancy. Class 3 locations have 46 or more buildings intended for human occupancy, or are areas where a pipeline lies within 100 yards of either a building or small, well-defined outside area (such as a playground, recreation area, outdoor theater, or other place of public assembly) that is occupied by 20 or more persons on at least 5 days a week for 10 weeks in any 12 month period. Class 4 locations are any class location unit where buildings with four or more stories above ground are prevalent (e.g.

All four of the TGP waiver segments (described in Section D) have changed from Class 2 to Class 3.

Pipeline safety regulations impose more stringent design and operational requirements as the class location increases. When a class location changes to a higher class (e.g., from class 2 to class 3), the operator must reduce the operating pressure on the pipeline to provide an additional margin of safety. The operator may be able to avoid reducing pressure, in some cases, if a pressure test on the pipe has confirmed that a prescribed safety margin exists. In these cases, if a previous pressure test has not confirmed the prescribed safety margin, then the operator must test the pipe to confirm the margin. In other cases, the operator must reduce the pressure or replace the pipe with new pipe.

TGP has stated that in order to provide reliable natural gas service to its customers, it cannot permanently reduce the operating pressure along the waiver segments. Consequently, in order to meet pipeline safety regulations, TGP would be required to conduct a requalification test or replace the pipe in the four waiver segments. In some portions of the waiver segments, current regulations would require TGP to replace the pipe. In other portions, current regulations would allow TGP to conduct a requalification test (TGP has already tested these portions). By replacing the existing pipe with new pipe that has the prescribed design factor, TGP could eliminate the

B.2 TGP's Proposed Risk Control Activities

For each waiver segment, TGP proposes the following risk control Activities:

1. Internally inspect the waiver segments using geometry and magnetic flux leakage in-line inspection tools, which are not required under current regulations. These tools reliably identify indications of wall loss (e.g. corrosion), as well as dents and gouges from initial construction damage or third party excavators working along the pipeline right-of-way. These internal inspections have been performed and the OPS Southern region has reviewed the inspection results.
2. Internally inspect an extended length of pipe (the "extended segments") bordering each waiver segment to further extend the benefits of the integrity analysis. The extended segments cover the distance between Compressor Station 860 and mainline valves 861-1, 560-1, 560-2, and 560-3, a distance of approximately 18.2 miles on each pipeline.
3. Repair indications of corrosion, existing construction damage, and existing outside force damage identified by the internal inspection. TGP used more conservative investigation

anomalies that are well below the threshold where pipeline integrity might be compromised.

4. Perform close-interval surveys on the waiver segments and extended segments, as an additional method to detect possible pipeline corrosion. Close-interval surveys are not required on these segments under current regulations. TGP has performed close-interval surveys on approximately 18.2 miles of pipe on each line.

OPS has compared the expected risk reduction produced by the Activities to that which would be achieved by compliance with current regulations and concluded that the Activities will likely achieve a margin of safety and environmental protection comparable to the margin that would be achieved by compliance with 49 CFR § 192.611. Furthermore, because of the resources saved by not having to replace pipe in the waiver segments, TGP will be able to assess the integrity of additional portions of its system, which reduces the overall risks along the TGP pipeline system.

OPS is considering granting a waiver to exempt TGP from the requirements of 49 CFR § 192.611 on the four waiver segments. If OPS grants the waiver, OPS intends to authorize TGP to implement the Activities described in this section in lieu of compliance with these requirements. TGP and OPS will monitor the effectiveness of the Activities.

C. Alternatives Considered

replacement of requirements of 49 CFR § 192.611 (see Section B.1) on the four waiver segments.

2. Denial of the waiver and enforcement of the requalification testing and pipe replacement requirements of 49 CFR § 192.611 on the four waiver segments (see Section B.1). In this case, OPS believes that rejection of the Activities will result in a lost opportunity to provide comparable safety and environmental protection for the communities living along the waiver segments and a lost opportunity for superior safety and protection along the extended segments.

D. Affected Environment

The product transported in the TGP Pipeline System is pressurized natural gas which is lighter than air and flammable. If released as a result of a pipeline leak or rupture, natural gas can potentially ignite causing fires or explosions. Industry experience demonstrates that pipeline rupture-initiated fires almost always result in only localized damage to the vegetation and animal life, localized human health impacts (deaths and injuries), and localized damage to property (i.e., in the area immediately adjacent to the failure site). It is possible that a rupture occurring in a

to the site of the pipeline leak or rupture. However, the likelihood of a such an occurrence is believed to be very low. Other than localized impacts on humans, property, vegetation, or animals in the event of a fire or explosion, there are no significant environmental impacts from natural gas pipeline leaks or ruptures.

Even though the environmental impacts from natural gas pipeline failures are minimal, TGP and OPS reviewed the environment in the vicinity of the waiver segments to understand the resources which could be affected by pipeline failures on those segments. The remainder of this section summarizes the key environmental features in the locations impacted by the Activities (i.e., the waiver segments and extended segments).

TGP has carried out the Activities along four segments located together on its parallel Lines 800-1, 500-1, 500-2, and 500-3. TGP has performed close interval surveys, internal inspections, and repair activities along 18.2 miles of each of these lines, between Compressor Station 860 and mainline valves 861-1, 560-1, 560-2, and 560-3. Land use along these sections is predominantly pasture, with some agricultural, residential, and light industrial development. There are no known parks, natural and scenic areas or other public lands or special use areas crossed by these pipeline sections. The vegetative cover along most of the area traversed and adjacent to the lines is

There are two ponds at the edge of the right-of-way of the 18.2-mile section of the four lines. The lines do not traverse any bodies of water or wetlands.

Within the 18.2-mile sections of Lines 800-1, 500-1, 500-2, and 500-3 are the four waiver segments, where TGP has requested a waiver from requirements of 49 CFR § 192.611. These segments begin approximately 11.2 miles downstream of Compressor Station 860, in Hickman and Dickson counties, Tennessee; the total length of the four waiver segments is 15,006 feet. The class location for the waiver segments has changed from Class 2 to Class 3. The area adjacent to the waiver segments contains 37 houses, 4 4-unit apartment buildings, 3 duplexes, and one small business. The buildings are evenly distributed on either side of the waiver segments, with some concentration near the center of the linear section. The only waterbody or wetland present within this section are two ponds along the edge of the pipeline right-of-way. The pipelines do not traverse these ponds.

No federally- or state-listed threatened and endangered (T/E) species are reported as inhabiting the area adjacent to the waiver segments. There are no known National Historic Landmarks, cultural resources listed on the National Register of Historic Places, or archaeological or paleontological resources located within these segments.

designated critical habitat. OPS believes that the level of disturbance created by completion of the Activities is unlikely to have adverse impacts on species or habitat and that compliance with current regulations would likely result in a greater impact on the environment.

E. Environmental Consequences of Proposed Action and Alternatives

This section describes the environmental impacts of the two alternatives described in this Environmental Assessment: approval or denial of the waiver request. As stated in the previous section, the environmental impacts of natural gas pipeline failures are minimal, restricted to the immediate vicinity of the failure location.

E.1 Environmental Impact of Approving Waiver

OPS's preferred alternative is to approve the waiver request, allowing the proposed Activities described in Section B. OPS believes that the Activities will provide a margin of safety and environmental protection that is comparable to current regulations. This margin of safety and environmental protection is achieved by implementing the Activities over the full 72.8 miles comprising the waiver and extended segments. The Activities address causes of failure that have

- Internal inspection of the pipeline and repair of anomalies produce additional protection from corrosion, construction and material defects, and prior outside force damage.
- Close-interval surveys of the pipeline provide additional information to allow more effective protection from corrosion.

If OPS were to deny the waiver request and require compliance with current regulations, TGP would be required to replace pipe along some portions of the waiver segments. Pipe replacement introduces some adverse environmental impacts that are avoided if the waiver request is approved. Pipe replacement involves excavation of the right-of-way to replace the pipe segment. Excavation activities would result in disturbance of the vegetation and wildlife in the immediate vicinity of the pipeline.

For these reasons, OPS is satisfied that granting the proposed waiver will provide a comparable margin of safety and protection for the environment near the waiver segments. Although the waiver is expected to provide net environmental benefits, these beneficial impacts are not expected to be significant, because of the minimal environmental impact associated with gas pipeline failures,.

OPS has determined that the Activities described in Section B.2 provide a comparable margin of safety and environmental protection to replacing or requalifying pipe. In addition, if OPS denies the proposed waiver, TGP would be required to replace or requalify pipe in the waiver segments. As described in Section E.1 above, the pipe replacement required by compliance with current regulations introduces some adverse environmental impacts that are avoided with the proposed action. Denying the waiver request would likely require TGP replace pipe along portions of the waiver segments, thereby causing environmental disruption due to excavation activity.

F. Environmental Justice Considerations

In accordance with Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low-Income Populations), OPS has considered the effects of the Activities on minority and low-income populations. As explained above, approval of the proposed waiver is expected to provide comparable safety and environmental protection to compliance with 49 CFR § 192.611. Residents near the affected pipelines will have a comparable level of protection to the level they presently have, regardless of the residents' income level or minority status. Therefore, the proposed waiver does not have any disproportionately high or adverse health or environmental effects on any minority or low-income populations near the affected segments.

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H. Conclusion

Based on the above-described analysis of the proposed waiver, OPS has determined that there are no significant environmental impacts associated with this action.